METHODS
of
TEACHING THE BLIND:

THE LANGUAGE ARTS

S. E. BOURGEAULT

HV1669
B666

American Foundation for Overseas Blind
Far East Regional Office

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FOREWORD

For many years in Asia there has been a demand for a Teachers' Handbook. No one so far has found it possible or practicable to produce in a single volume all that a teacher should know when he or she sets out to be a teacher of the blind. The FERO is now setting out to publish a series of monographs which, when seen together, might conceivably be a teachers' handbook, but each in its separate form will be a complete and comprehensive treatise on a specific subject.

Dr. Bourgeault, in preparing this, the first of these monographs, has managed, in a most competent, comprehensive and compact form, to present in a direct manner the fundamentals of all there is in the learning experience, from both the teacher's and the visually impaired child's points of view. As Dr. Bourgeault himself has said, there may be nothing particularly new or original in the content, but there certainly is something new in the way it is presented. I am confident that this monograph will very quickly be accepted as a constant source of reference by all teachers starting to work with the blind, and indeed by all workers for the blind who have any responsibility whatsoever for direct or indirect service which involves a learning experience.

Dr. Bourgeault, has at various times served as a teacher of blind children; a supervisor and administrator of a State programme of education for blind children, and for some years, as a teacher of teachers in one of the outstanding American institutions of higher learning in the field of Special Education. His pioneering work in Taiwan integrated education, as well as his consultative work and observations in Asia make him well qualified to suggest a teaching approach which is not only manageable in our Region, but broadly applicable because it is based on widely accepted principles of education.

This monograph may appear a little deceptive in its simplicity. In fact, there can be few men with the training and experience, who could have distilled this accumulation of knowledge into a monograph of such manageable size as Dr. Bourgeault has done.

In my opinion it marks a milestone in the development of professional material for work with the visually impaired in Asia.

MAJOR D. R. BRIDGES
Director
Far East Regional Office
American Foundation for Overseas Blind

ACKNOWLEDGEMENT

I do not claim origin for the ideas expressed in this book. Nor do I altogether claim origin for the manner of expression. After having participated in so many discussions—formal and informal—in one's field, it is difficult to know and acknowledge wherein to place one's debt.

I would, though, like to offer my appreciation to Dr. Jeanne Kenmore and all the others who have been so helpful to me in my efforts to teach.

S. E. B.
Kuala Lumpur, 1969

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A STATEMENT OF PHILOSOPHY

The education of blind children has for too many years been left to those few dedicated persons, often visually handicapped themselves, who have passed along their techniques from teacher to teacher without *regard for* or *recourse to* formally presented materials of proven value.

By identifying the practical and the proven, this book is meant to aid the untrained specialist teacher who struggles every day with the many decisions which a specialist must face, to guide those who are preparing for careers in education of the visually impaired, and to assist those who supervise such programmes.

It is the purpose of this book to carefully present the logic of certain procedures of instruction; to give the procedures in sufficient detail so that even those many teachers without special preparation can improve their service; and to make available for the first time in text certain *recommended* instructional procedures for teaching language arts to the visually handicapped child.

The methods of instruction presented can be applied equally well to blind children in local public schools or in public or private residential schools. Any small differences are noted.

The public, and even the teaching public, has generally been poorly informed of the character of "special education" for the blind or seriously visually handicapped child. To the average person, braille reading is an amazing skill—he cannot imagine how it can be learned. Since it is human nature to avoid or to be unduly impressed with what we cannot understand, too little attention has been given to what is "special" about special education for the blind, and what is not.

Throughout this book a philosophy in keeping with the needs of the children to be served underlies the instructional methods. An individual's acceptance or rejection of these techniques will depend on the extent to which he understands the following ideas:

1. A blind child is more *like* a seeing child than he is different.
2. A blind child must receive a balanced programme arranged so that he has a natural, competitive experience—*a regular curriculum.*
3. In order to be competitive, a blind child must learn certain skills not required of seeing children, so he needs *a supplemental curriculum.*
4. *All* children learn at different rates of speed.
5. Children learn in *various* ways.

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I.

WHAT IS LEARNING and HOW DO CHILDREN LEARN

It is obvious that learning occurs in many places and in many ways. Personality and behaviour are the result of learning combined with inherited characteristics. New ideas, concepts, and facts about the world are learned beginning from the moment of birth. Although each culture differs, there are always specific attitudes, values, and skills an older generation wants to teach to or to pass on to its youth. Schools assume responsibility for certain areas of learning, while other areas are generally taught before the child is of school age.

Much learning is *informal*—a bi-product rather than the principal objective of some activitiy or experience. In the home, emphasis is on informal learning, and it is as important to a child's development as what he may learn later.

Much is also acquired informally throughout a child's school career; however, emphasis in the schools is on *formal* learning.

THE WAYS CHILDREN LEARN

Understanding the individual needs of various children and the unique qualities of each idea, fact, or skill to be taught will lead to an assessment of the value of each type or kind of learning.

Learning by Imitation

One of the most obvious examples of imitative learning is the acquisition of patterns of speech and language. The old saying, "the child speaks as he is spoken to," is true and constant. If we want a child to acquire excellent speech habits, we merely need to set a superior example. Articulation, vocabulary, syntax, *all* the refinements of the example will eventually be produced by the young child.

Also acquired or learned by imitation are manners, customs and attitudes. There are many kinds of behaviour almost totally produced by what is observed in others.

Learning by Trial and Error

A child begins trial and error learning very early, and continues to use this method throughout life.

This method is used repeatedly, for instance, in acquiring control in the use of one's muscles. In learning to walk, the child tries a step, falls, and rises to try again—each practice step giving him more experience from which to judge the next move, and each success reinforcing the appropriateness of that choice.

It should be noted that Trial and Error Learning can be raised from the reflexive level so that rather than exhibiting random trials the individual is encouraged to think about and make logical decisions from his various choices.

This kind of Trial and Error learning should be emphasised from time to time as it gives the child the opportunity of and responsibility for independent solving of problems, whether they are mathematical, scientific, or social.

Learning by Rote

Rote learning is imitative learning *without* meaning. For example: learning to count 1, 2, 3, 4, with no idea of the unit value of each number; learning words to a song without understanding the meaning of the lyrics; memorising traditional sayings of famous authors and statesmen with no real grasp of the important ideas expressed.

Rote learning is often abused; it is over-used when people forget that there is little value in memorisation without meaning.

Learning by Absorption

Part of our culture we learn merely by being surrounded by it. We are not aware of having learned certain values and attitudes, but they become a part of us.

Attitudes toward such things as learning and the teacher, time and its use, the family and the home, are so deeply a part of our general cultural pattern that we are not aware of them as "patterns." Yet, they differ from culture to culture and they are learned by our children through absorption.

CONDITIONS WHICH AFFECT LEARNING

Most teachers recognise the value of a classroom which offers sufficient protection from the elements, and adequate space, light, and equipment. And they strive to make their rooms clean and attractive in order to promote an atmosphere conducive to learning.

There are two *essential* conditions, however, on which any good scheme of learning is based.

Physical Comfort

An empty stomach, a headache, wet feet from the rain, insufficient clothing in the winter—any of these would be enough to divert a child's mind from the task at hand. An observant teacher can readily discover these kinds of problems and arrange sensible solutions, knowing that we learn best when we are physically comfortable.

Mental and Emotional Comfort

This is of even greater importance, but, unfortunately, more difficult to judge. Is a child secure? Does he feel anxious because of problems in his home? Is he afraid of the competition of an examination? Is he unhappy because he is ignored, or teased, by classmates?

Sometimes children "catch" anxiety or worry just like they catch a cold. If a mother or father is seriously worried about a problem—and it need not be a problem which directly affects the child—the child will often become anxious also, and do poorly in his school work.

Because the range of possible causes is unlimited, emotional discomfort is a difficult thing to overcome. But it is a serious problem, and clearly a teacher responsibility if we are to have our teaching energy most effectively used and if we want every child to perform to the best of his ability.

PRINCIPLES OF LEARNING

How does a teacher begin to teach a child—whatever his age, whatever his circumstance?

From General to Specific

Children can learn big ideas and small details, and each has its proper place. But, when the child understands the interrelationships of the whole, he can better understand the parts because parts have more meaning when they are related. It is consequently more efficient to help him grasp the big idea—the *general*—and reinforce with the details—the *specific*—at a later time.

> Don't talk about making "change" if the child does not understand the idea of money or shopping.
>
> Don't talk about learning to read until the child has acquired a love and respect of books—a respect acquired through family or school reading-listening experience.

From Familiar to Unfamiliar

Just as strange or new ideas sometimes trouble adults, they similarly trouble children. A child will be more secure and will learn more rapidly if a *known* idea or fact progresses in a related, sequential way to the new or *unknown* fact.

If the goal is for him to understand and assume vocational responsibilities, then the first lessons should be about those elements of work which directly affect his immediate environment—and which, therefore, are familiar to him. For example: "Father leaves early every morning. He comes home very tired in the evening. He brings home money. He helps our family by going to work every day." Eventually, the concept of regular effort and its effect on the well-being of the family will be understood and appreciated by the child.

From Concrete to Abstract

The child is surrounded by social custom, verbal tradition, and language patterns that are abstract. Words themselves are always abstractions. If a word defines a thing and has only one meaning, the child will more readily understand; but if the word concerns an idea, rather than a thing, it is always difficult to interpret at once.

The child needs a concrete experience, such as handling and counting real "bananas," in order to make the transition to the abstract number representation used in mathematics. ("How much are 5 bananas and 2 bananas?").

APPROACHES TO LEARNING

Logical and Psychological

There are important differences between methods which are logical and methods which are psychological. They are not always combined, but the two can be cleverly combined to achieve rewarding results.

Logical organisation stands the test of such questions as: Was the material valid? Was there a rational sequence? Was the relatedness of each idea clear? Yet, one may teach things in a purely logical manner and still fail to impart understanding because of the child's lack of interest.

Psychological organisation is concerned with *how* the child should be motivated to interest in an activity or skill or idea.

It is logically valid to teach coin values to young children, but it must be made to be psychologically valid. A combined approach may suggest a shopping excursion, a play store in the classroom, or a coin collection as a class project. These ideas, and others, will motivate the children—they create interest, a need, and a desire to learn. When the children need to know if they have enough money for a purchase, or if they received the proper change from the shopkeeper, or the order in which the collected coins should be arranged, then the logical instruction about coins is valid, the psychological motivation is valid, and learning is faster and more thorough.

Stimulating Through All the Senses

Sight, hearing, taste, touch and smell all play vital roles in stimulating learning. Without even realising he knows, a child when questioned can recognise differences between busy streets and busy playgrounds through hearing, an apple or an onion through taste, fur from cloth through touch, vinegar from water through smell. We depend greatly on visual stimuli for teaching procedures, but vision is not the *only* cognitive sense.

In teaching blind children, the emphasis must be on the "other" senses and the use of devices and techniques available to counter the lack of sight. Such substitution brings results which are rarely *exactly* the same as teaching through seeing, but can give a blind child a usable concept which will allow him to compete in a seeing world.

CHILDREN LEARN AS INDIVIDUALS

The teacher is an important influence in the life of a child and there are many ways in which he can control or guide the child's learning experiences.

He arranges for frequent opportunities for his students to be treated as individuals, because he recognises that his students have had varied experiences and therefore have varied interests. He recognises that children's physical and emotional needs vary, and he is sensitive to these. He realises that a learner requires satisfactions or rewards for learning and knowledge of progress achieved, and he attends to these needs.

Children themselves know that they are learning at different rates and in different ways than their classmates. They would thrive if the educational system accepted these principles of learning—basing its programme content and teaching methods, and applying its pass/fail criteria accordingly.

HOW DO BLIND CHILDREN LEARN?

We have discovered that *all* children learn best:

BY	imitation, trial and error, rote, and absorption
FROM	general to specific, familiar to unfamiliar, concrete to abstract
IN	physical comfort, and emotional ease
THROUGH	logical sequence, psychological motivation, and all the senses
AS	individuals

Blind children learn generally in the same manner as sighted children. The principles of learning, the characteristics of learning, and the conditions in which learning most readily takes place are the same for all children, handicapped or not. For a blind child, a school experience can satisfactorily approximate the experience of a seeing child, and this should be our goal.

The ideas presented to this point are basic to the development of all education—from preschool through higher education; from the development of curriculum to the selection of teaching methods.

Because of the great need for communication skills as the foundation for a successful life experience, the following material on Language Arts has been prepared to assist those educators who also hope that blind children can someday enjoy a truly competitive position—first in the regular classroom, and ultimately in the mainstream of life.

II.

TEACHING READING

Reading instruction must have a strong foundation. The child must acquire word or character recognition skills; he must develop efficient auditory discrimination; he must have an acquired pattern of spoken language. This and much more.

The skills required of a child learning to read must be taught when *his* emotional, intellectual and physical attributes allow. Because all children vary in their rates of development, they also vary in arriving at the time when they are most likely able to begin to read.

The *teacher* is the best judge of a child's readiness to read. It is not a medical judgement! It is not a subjective parent judgement! After extended observation of the child in a variety of situations, the teacher must objectively consider each element of readiness. How each item is judged will determine the areas to which special attention must be given.

Elements of General Readiness to Learn

1. Physical :

   Can the child discriminate auditorily between common sounds of considerable difference? (For example, between the sound of paper rattling and the sound of a coin falling onto a table.)

   Can the child speak clearly and distinctly in the language of instruction?

   Can the child give attention to a 10 or 15 minute activity of high interest?

   Does he have some ability to use his hands for holding, grasping, turning, or otherwise controlling learning materials?

2. Emotional :

   Does the child have a natural desire to be a part of the group?

   Does he want to achieve success to gain approval of the teacher?

   Is he willing to take turns with other classmates?

   Is he interested in learning?

3. Intellectual :

   Does the child have a knowledge of common objects around him?

   Can he understand the sequence of a simple story?

   Can he remember things, ideas, or words—does he have some recall?

   Is he able to follow simple directions?

   Can he complete an assigned task?

It is apparent that these requirements are simple, but they are essential to success in the development of all learning.

Since growth in the individual is uneven, it is not surprising to have the average child skilful in some but deficient in other areas. For this reason, structured preschool and kindergarten experiences in all parts of the world include attention to development in all readiness areas.

Also, we can readily understand that a child who does not see may be slower in acquiring the necessary attitudes and skills. Our job is to help him have experiences which will make up for any deficiencies as quickly as possible.

While many natural experiences provide much incidental learning opportunity for blind and sighted alike, it is risky to leave any of these important areas to chance or accident. We must formally structure activities according to each child's individual need, choosing for content, skills demanded, and the outcome desired.

Reading Readiness for a Blind Child

Reading readiness for a blind child is the same as for the seeing. The child needs the same intellectual, emotional and physical abilities, but he may be more deficient in them than a seeing child. Two principal factors must always be kept in mind as we attempt to assess and develop readiness :

1. Blind children may *take longer* to acquire a concept or skill.
2. Blind children will probably *need more repetition* of an experience in order to develop a usable concept.

There are some additional skills required of a blind child which can be best taught with a combination of formal activities and incidental reinforcement. Fill in the omitted experiences by giving the child numerous opportunities to become as efficient as his seeing classmates. Make it fun !

SPECIAL READINESS

1. Recognition of Likenesses and Differences :

   Categorising, finding likenesses and differences, is one of the basic selective discriminating processes of the human mind. Emphasise tactual and auditory clues as a substitute for visual perceptions in these areas :

   A. In tactual condition from gross to more refined. (As in comparing paper from very rough to very smooth.)

   B. In size, from large to small. (Coins could be compared by tactual circumference or by sound when dropped on a desk.)

   C. In form. (Regular or irregular shapes.)

   D. In kind. (Matching or sorting cloth according to wools, cottons, silks.)

2. Categorising-Classifying :

Children may be encouraged to categorise, or arrange in sequence, or play guessing games and listening games with :

wood blocks	hardware items
cloth	buttons
coins	other local objects

3. Moving Hands from Left to Right for Braille Reading :

This hand and arm action is not an automatic movement; it must be taught. It can be an adjunct in Item 1 and Item 2 activities by requiring *left* to *right* placement (rather than right to left or top to bottom, etc.) whenever possible in the games or assignments. Later, this can become a special activity using gross embossed forms or lines. It will not be "braille reading" at this stage—merely line following—but it prepares for discrimination of a "difference" in an embossed line.

4. Turning a Page :

While most seeing children have much experience with books and have no difficulty in handling the pages, it may be a new experience for the young blind child. He will have many materials and papers to keep in order during his education. Let his practice materials follow book form in position of bindings, direction of page turning, recognition of front and back of book. The pleasure of reading is stimulated through tactually pleasant book covers and interesting content. If the book is a collection of the child's own classwork, for example, he will be highly motivated to read and re-read, to share with friends and family, and to anticipate further reading instruction.

Practice books can be prepared quickly and inexpensively with cloth remnants, cardboard covers; rings or loosely tied yarn, shoelaces, or string for binding, and can actually be prepared by the child himself.

The sooner the child learns to enjoy the physical qualities of books and acquire an interest in the idea of reading for pleasure, the earlier he can concentrate on actually learning to read.

5. Manipulating Materials :

Wide use of a variety of materials increases the child's manipulative skills and expands his understanding of things to do and things to use in his world. Invent games, class or individual projects, collections, handicrafts, and other activities using :

clay	cardboard	pebbles
paste	beads	paper
bamboo	string	shells and many others

6. Learning Comparative Terms and Meanings :

Likenesses and differences need to be isolated, discussed, judged. To do so, we need certain vocabulary; it is some of the most important vocabulary of our lives. While *some* blind children may have *some* understanding of such vocabulary, we cannot leave it to incidental learning. Learning must be sequential; it must be planned. All blind children must attain a satisfactory understanding of the necessary terms and the concepts which they describe. These terms are frequently used in social interactions, as well as in learning situations.

shallow : deep	more : less	hard : soft
heavy : light	high : low (tone)	loud : quiet
full : empty	narrow : wide	large : small
thin : fat	tall : short	

The blind child is *absolutely disadvantaged* if meanings are not carefully taught. Do it through games, class projects or assignments, commands, story telling, and discussions.

7. Positional Concepts :

In one sense, positional concepts are merely added comparative terms, but I like to make a separate point about them because of their importance to eventual skill in orientation and mobility. Position comparatives define the basic issue of where things and people are in relation to one another. They are critical for eventual reading activities.

They need many illustrations and reinforcements by example until the child has built up a background of understanding about how and why they vary in meaning :

before : after (time)	beside : away from
before : after (space)	near : far
under : above	left : centre : right
high : low	in front of : behind
top : bottom	in : on

There are others.

8. Names and Tactual Discrimination of Classic Primary Shapes :

Square Circle Triangle Rectangle

Basic shapes need to be taught with a wide range of reinforcement since they are not equally easy to describe verbally. Much learning in the primary grades revolves around understanding a basic form. (How many chairs at a square table? Draw a circle around the correct answer. How much land in a Ping?). These concepts are difficult to impart with words alone unless the blind child was originally taught a square, a circle, a rectangle, and a triangle.

These, then, have been Special Readiness activities for a blind child. One can readily see that this variety of needs can be individually fulfilled by a creative teacher who knows how to take advantage of every scrap of local material and every experience. In selecting objects and planning discrimination activities remember to plan them in sequence: work from easy to difficult, from single to multiple, from limited to comprehensive.

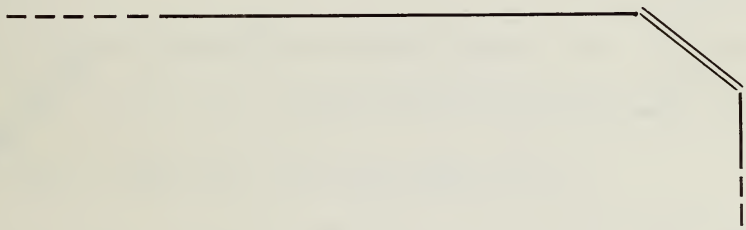
The teacher must show good judgement about matters of formality vs. informality, structure vs. coincidence, and sequential vs. random choice. The anxious or inexperienced teacher leads the blind child into premature and frustrating braille reading experiences. The skilful teacher takes enough time to carefully teach, review, and reinforce readiness experiences. A strong beginning pays big dividends in the future.

There is one other Special Readiness Activity for a blind child—

Following An Embossed Line

The final special readiness activity for the blind child is practice in following an embossed line. It is an experience which utilises all areas of general readiness and demands some efficiency in each area of special readiness presented thus far.

In the beginning, clip the top right corner of work sheets to give a child a clue to the top and bottom of the page :



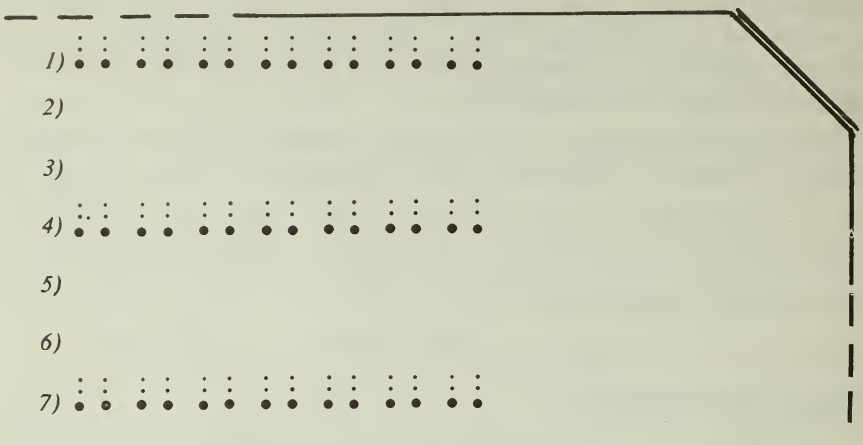
Use this corner-clipping technique consistently on individual worksheets, flash cards, and cards for matching phrases until he reads well enough to eliminate error and can quickly tell top from bottom.

The teacher should require merely minimum standards in hand position as follows: both hands together, moving from left to right together. Show the child how to "back up" if he is lost, or if he needs help in finding the next line.

Material Preparation and Presentation

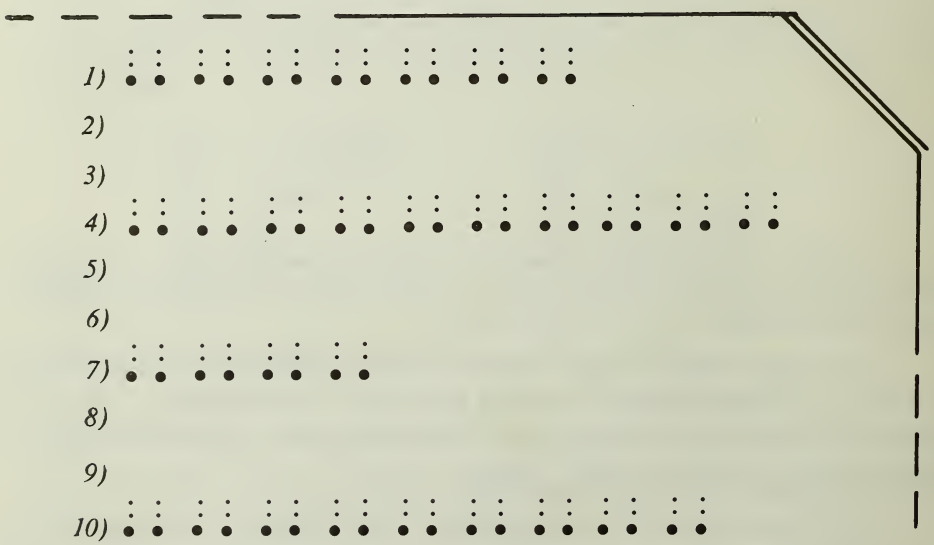
His first task is to follow several lines of raised lines or dots without losing his position on the page. Space all line activity materials generously. Usually a minimum of two spaces between lines is essential in the beginning, and can be continued through all the teacher-made materials of the first half of the first year.

Prepare simple activity sheets of three or four clear braille lines, using dots 3-6 as an example :



(The objective is to give the child experience, and require success in: follow each line; finding the next line; and showing the first line, top line, last line, bottom line etc.)

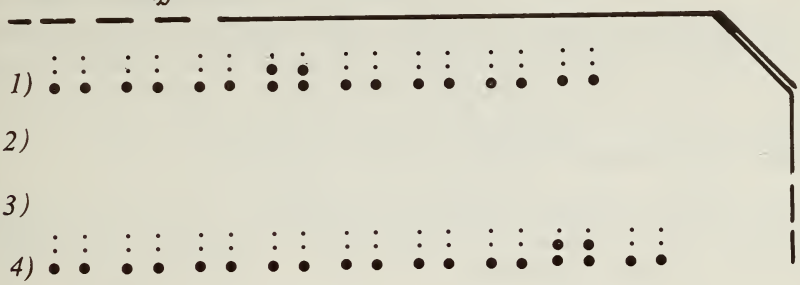
To heighten interest, move on to a more complex activity of the same skill; have him choose the longest line or the shortest line from among several lines on one page.



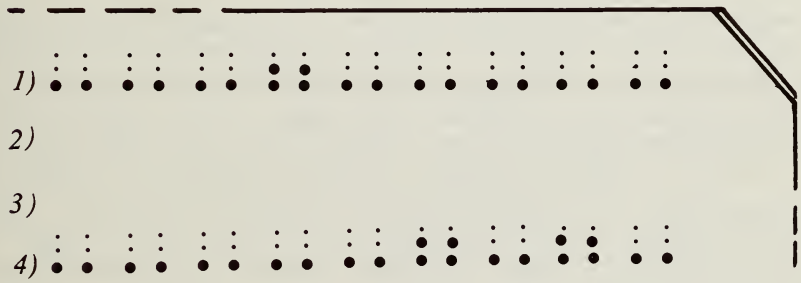
(This lesson does not stand alone ! All questions asked in previous lesson are good review and can be asked of this material as well !)

Progress carefully to recognition of a difference in dot pattern—but only in one cell along a line. When he can regularly locate the difference, then increase frequency of *same difference*, and next increase the number of kinds of difference. Remember, too, that a *space* is a difference. Present these in a logical sequence of easy-to-difficult. Vary the reinforcing activities by changing *position* of differences on the line, or by changing the *number* of differences.

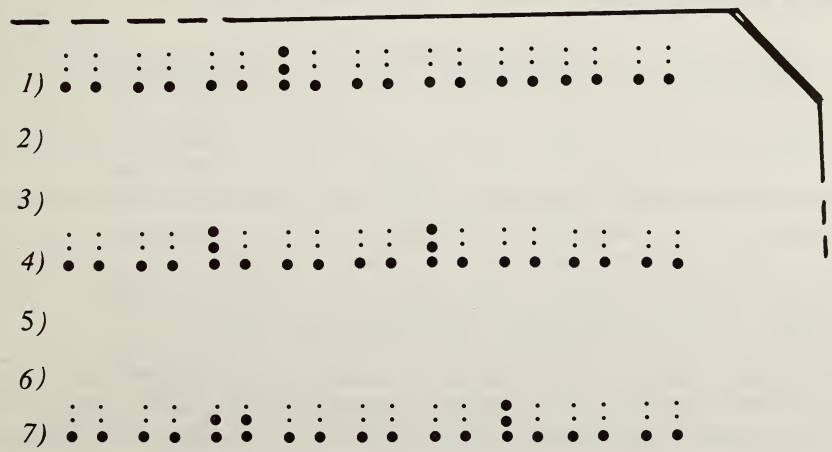
a) *Find the difference*



b) *Find the differences*



c) *Find the differences; how many differences, etc.*



Using common sense in an educational sequence does *not* mean following a step-by-step, rigid schedule. Learning does not occur in discrete steps—one idea at a time. Presentation of materials should be logical as well as psychological, but the child will be on many different levels at one time. He may be practising one skill he has known for a long time; simultaneously he may be practising another skill he has just recently acquired; and if he is a very capable child, he may have been introduced to still a third skill for the first time !

Any chosen activity has many facets—many opportunities for reinforcement or initial teaching. A teacher can efficiently correct only one problem at a time, successfully emphasise only one concept at a time, so continuing comments to and continuing guidance of the child are important since they help him to focus on the skill to be emphasised when the activity was chosen.

If the child has difficulty, this shows a weakness in one of the other special readiness areas, and the teacher is moving ahead too rapidly in the child's individualised instructional programme.

When Should All of This Occur ?

The general pattern in most parts of the world, regardless of the language used or the braille code required, is to use the kindergarten year to eliminate readiness deficiencies and to promote specialised readiness skills and abilities. If, however, no kindergarten is available, and if some of the material cannot be presented in the home, then the first year of school will be the child's first opportunity for structured readiness instruction. It is not important if he works below the achievement level of the seeing group in an integrated programme. He will catch up to the reading level of his classmates by the end of the first year. In a segregated programme, the same prolonged readiness programme should be observed.

The First Braille Words

When a child has consistent success with readiness materials involving several discriminations at one time, he is ready to begin learning his first words.

This will not be the first time he has encountered a brailled word, because labels of important furniture, doors, windows, and so forth have been placed about him in his school room and in his home. He already understands that those "strange forms" are called words, and that they are the names of familiar objects. These exposures increase his interest in reading, but are not taught formally in any way. When a child asks, he is told such things as "That is your name," "It says light switch," (or chair, or door, etc.).

Formal introduction of elements of reading or reading symbols is the teacher's job. The words chosen for the first reading instruction may be critical words in an introductory reading book for the sighted or, if emphasis is on the *psycho-*

logical approach to learning, may be names of familiar people, especially his *own name*, and words telling about an experience or activity that has great meaning for him at that time.

The words are to become immediately recognised. No structural analysis should be taught at this time. The teacher is trying to duplicate the "sight vocabulary" of the print-reader—those words which are known, commonly used, immediately recognised, and almost memorised or taught by rote.

Recent research shows the single braille cell to be the thing the child uses to identify unfamiliar words, rather than whole words. Using these isolated parts to build up word-recognition skills can be emphasised later.

In the beginning, however, it is more important to emphasise the rapid "reading" of a few words arranged in varied patterns. This "reading" will set the habits and the attitudes on which all later reading instruction can be based :

a) we read for facts
b) we read for ideas
c) we read by moving our fingers rapidly over the lines.

As soon as enough of these words can be discriminated so that the child has some successful experiences in "reading" them combined into simple two or three line stories, some analysis can begin. If analysis is introduced too early, however, the child will acquire bad braille reading habits; he will read too slowly with too much attention to isolated braille cell form, rather than word meaning, and greatest of all, reading will become a tedious, burdensome experience, rather than a satisfying, rewarding emotional experience for him.

There is no research on the advantages of spaced, as opposed to unspaced braille, and there are countries in Asia which use each. There is some reason to question the importance of the space-saving value of non-spaced braille, since it deprives the child of a significant clue provided the seeing child, who has every print character distinctly before him. Spacing between words is therefore recommended.

Extra spacing between lines should continue during these beginning braille reading experiences. Few words should be used in the beginning, and additional words should be included in the lessons a few at a time. The words should be introduced *and* practised in context, wherever possible, but isolated words can be presented in rows or lists of multiple choice selection activities for reinforcement. For the first few months, the smallest braille form used should be the whole braille words, never isolated letters.

If, through good auditory discrimination experiences, the bright child shows some phonetic analysis skills, his observations and comments may be duly noted, but should be diverted toward emphasis on learning good braille reading habits. Smooth readers with rapid movement become more efficient readers; over-analysers become "scrubbers" of braille, and are less efficient readers.

All previous principles should be applied to choice of materials and rate of presentation: easy to difficult; logical *and* psychological; known to unknown.

1. Introduce few words; show "new" words at the beginning of an assignment.
2. Practise reading words in ways which use previous learning, such as matching for a likeness, or looking for a difference.
3. Use words in isolation, then proceed to phrases, then conclude with meaningful sentences.

READING PRACTICE IDEAS

Simple Stories

This simple whole word "story" shows the principle of word arrangement in an easy-to-read activity. New word reminder, word differences, and full phrases or sentences are stressed.

baby see the (*old vocabulary*)

ball smile roll (*new vocabulary*)

1) See baby.

2)

3)

4) See baby smile.

5)

6)

7) Roll the ball.

8)

9)

10) Baby roll the ball.

11)

12)

13) See baby roll the ball and smile.

Matching

Another helpful experience which uses past readiness activities is matching of whole words, presented in lists or columns :

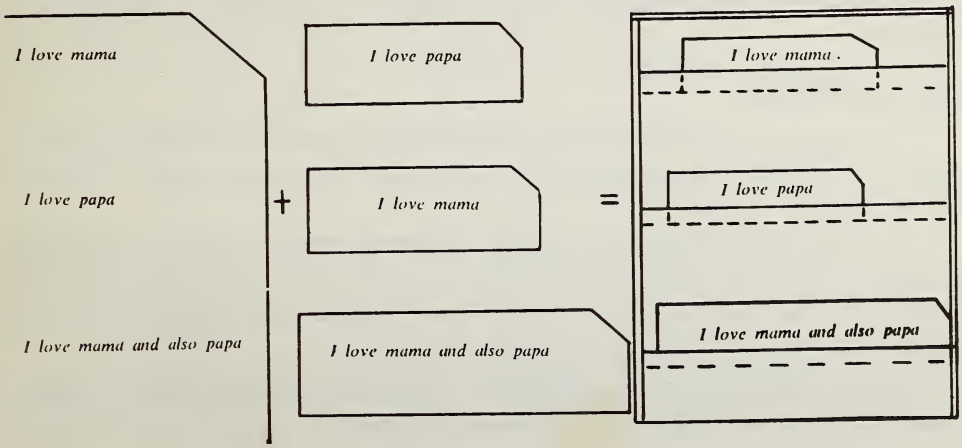
Instructions: *In each line, which word is not the same ? Draw a circle around it !*

baby	*roll*	*baby*
smile	*ball*	*smile*
see	*the*	*see*
roll	*roll*	*ball*

Another activity might be finding his name from other names in a list. Give only one other or, at the most, two other alternatives. Be certain they are considerably different in beginning tactual form and/or length to help child chose correctly.

Ordering

Another activity of value combines reading, selecting a response, and matching a given order or sequence. Use a few simple phrases or sentences in the beginning. The child is given a completed "story" to read, and next, matching "strips" with full sentences. The sentence strips can then be aligned, or matched in sequence with the original. (A simple accordion-like folded paper taped to a large sheet will serve as a sentence holder.)



Multiple Choice (Choosing a correct form from among several alternates.)

This varies from earlier matching activities as there is no "correct" form against which the child can compare his chosen answer. It is his first "multiple choice" experience.

For the blind child, it is a help to set forth the possible answers *first*. Then follow the choices with the question which is best answered, or best completed with one of the responses already read.

Examples :

1. Mama I also
   I love.....
2. See pencil the
   Put down the.....

Relating

A most useful activity in which the child is asked to draw a line between one choice on the left column and a related person or idea or thing from the right column.

work	baby
keep house	mama
play	papa

If the child has difficulty in learning to draw connecting lines, a "chart" may be used as in the "ordering" section shown above.

The important idea within all of these suggested activities is vocabulary reinforcement through use of interesting, varied materials and formats. Manipulation of materials, use of standard elementary level reading activities common to both seeing and blind children, and independence in study are the essential ingredients.

Experience Stories

As a means of presenting short sentences of high interest with limited, teacher controlled vocabulary, some teachers like to develop "experience stories" together with an individual child.

The child tells briefly of an experience and the teacher modifies vocabulary (according to level of ability) and brailles the story. The child can then read something he knows about and which he has "written." The child will have a very good feeling about what he is trying to read.

I do not recommend this technique in the hands of an unskilled or novice teacher, but it is very helpful for the skilled educator.

Flash Cards

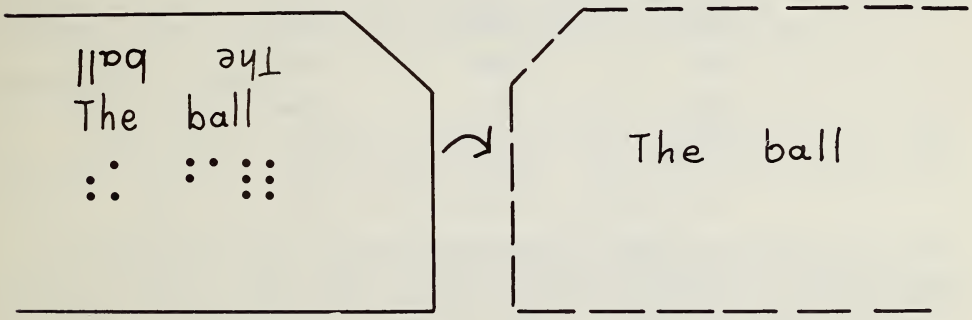
A flash card is a device for increasing rapid recognition or recall of certain facts or ideas. It is most commonly found in arithmetic classes where classmates, with or without a teacher present, can theoretically give each other good practice in established facts. This generally leads to rote learning, which is too often over-used. But according to most authorities, there are some facts which can be learned through rote experiences which will still be helpful in the future *because* they evoke such automatic responses.

In reading, the beginning "sight vocabulary" is often considered in this category.

If tactual flash cards are to be used between seeing and blind classmates, between two blind children, or by a teacher with a child, they should be used according to the following recommendations :

1. Present flash cards rapidly—leave stimulus exposed no more than 4 or 5 seconds.
2. Prepare the cards in braille and ink print. Edit both right side up and up-side-down so that the teacher or a seeing child can sit opposite or along side the blind child and they can work flash cards in comfort. Also put ink print form on reverse side of card for maximum variety of usage.
3. Clip corners.

Example :



Modifying Regular Materials

Perhaps the most difficult task for teachers of blind children is to learn to think tactually, rather than visually ! Material that is attractively arranged to seeing children is often *very confusing* for the braille reader if duplicated *exactly*.

Example for seeing children :

Mark an "X" on all the animals on this page.

cow sister
plate dog
chicken desk
clock mother
rabbit
horse Jimmy
father pillow
chair cat
Martha shoe

For blind children change the direction and arrangement as follows :

Draw a line under the animals on this page.

dog desk mother horse rabbit sister
chair Martha children clock father Jimmy
cow plate pillow cat shoe

There are equal spaces between the words in each line but no attempt is made to keep the words in columns. You *can* also make real columns to vary the braille patterns, as :

rabbit	Jimmy	Martha
cow	sister	father
desk	dog	pillow
Mother	dish	cat
clock	horse	shoe

The following questions should be asked when preparing supplementary braille material :

How much reading experience has the child had? For readiness material, triple space; for remainder of the year, double space material. Later the spacing can be reduced even further.

What is the object of the lesson? Don't crowd the braille page on teacher-made study materials. Paper is less costly than confusion !

Is the material well arranged? If the child is spending more time on following directions than he is on learning to read, adjustments in the material may be necessary.

HOW THE CHILD SHOWS HIS ANSWERS

Care has been taken thus far to avoid any discussion of braille writing—and for an important reason: braille reading and braille writing should *not* be introduced at the same time.

Minimum reading skill must precede writing instruction and practice in order that the child knows what he is trying to write. Further, writing on slates with a stylus seems to require more control and small muscle development than some children have when they first enter school. More about braille writing instruction will be presented later in this work.

Nevertheless, a child can and should be given a means to be independent in marking answers on his individualised practice material. Marking skill gives the child worthwhile experience in manipulating new materials such as pencils and crayons, and release the teacher from the one-to-one needs of oral responses.

What is There to Mark ?

In the foregoing suggestions on developing a basic reading vocabulary, many alternate selection or multiple choice activities were described. In all of these the child must tell you or show you which word or phrase he chooses as the correct response.

How Shall Marking be Done ?

Within the first year of a child's programme, the teacher has the responsibility to *introduce* and give some practice experiences in using *each* described technique. Some are more valuable than others, but all have use.

Rubbing Out the Dots

Obliterating can be used by asking the child to erase or "rub out" either the correct response or the incorrect responses. Both have disadvantages which must be weighed against the simplicity of the technique.

The multiple choice question ordinarily has one correct and two or three incorrect answers. If the child is asked to obliterate the single correct response, he cannot reinforce this correct answer when he checks his own work before submitting it to the teacher for evaluation.

If he is asked to rub out the incorrect answers it takes longer because there is more to rub out. More important, while the child is then able to re-read his question and his choice of "correct response," he has no way to mentally review his reasoning process.

Because of these disadvantages, "rubbing out" is used for marking a paper only in emergency situations.

It is generally true that if a child is truly ready to begin such independent activity, he is equally ready to learn to use a crayon or pencil for marking purposes.

Encircling

It is an easy matter to learn to mark a response by drawing a circle around it. While a pencil can be used, a crayon may be better in the beginning. If a child makes a heavy circle he can recheck his answers because the crayon, if used firmly, leaves a mark which can be *felt* on the surface of the paper.

Partial Circle Arc

Full encircling requires that the reader remove his reading fingers from the word or phrase being marked. It therefore causes an occasional response to be marked in error because one's place on the line was lost. To avoid this, some teachers encourage the child to "hold" the word or phrase or position with the left hand fingers (in the usual case of a right-handed child) and to draw an arc over the fingers which remain on the exact choice.

Draw a Line Under

Drawing a heavy line *under* a word can be done with crayon and usually re-located by the average blind child.

Push Pins or Tacks

Perhaps one of the best marking techniques is the use of small pins with large heads. These are given in sufficient quantity to complete the assignment at hand, and are merely placed (as in drawing an arc) *above* the response. Work must be done on a soft surface to allow the pins to be easily placed. This technique is rapid and allows smooth re-reading and re-location of selected answers for review or checking purposes.

Special Marking Techniques

Classroom writing assignments usually vary from place to place. Most daily school work in Asia can be done with the afore mentioned marking techniques. This should not stop the creative teacher from inventing specialised techniques to meet a specialised need. Just remember not to spend "two weeks teaching a skill needed for only three months." The priority system should favour the blind child's need to compete on the same basis as his sighted classmates, not the teacher's need to be clever.

But remember also that the greater the number of simple marking techniques taught, the better the chance of providing the blind child with a truly "equal" learning experience.

Editing Materials to Help Seeing Teachers

In all cases wherein a child is working on brailled materials for which the regular classroom teacher has basic instructional responsibilities, the embossed material should be "edited." In this sense, "editing" means to have available the print image in order to follow the child's work as he move his hands across the page.

This can best be done in ink since pencil tends to smear, or rub off when fingers pass over it regularly.

It should always be done above the braille, not below! If editing is below the braille, the print reader can't read because fingers obstruct his view. Ink print above the braille allows word for word following. In an integrated programme, a regular classroom teacher can be a superior teacher of a blind child without knowing the braille code if the child's braille work is edited.

Braille Reading Mechanics

In the beginning, sit opposite the child across the surface (desk) where the brailled material is placed. His fingers should be relaxed and curved toward the paper. While holding his hands, glide his fingers across the braille material from *his* left to *his* right. Ask him always to use both hands in first grade and in all readiness work.

Do not let child "scrub."

Keep fingers gently together.

Do not let child's hands "butterfly."

The child may choose two or three fingers of each hand. Either is acceptable.

He may later find a faster way for *him* (one hand, fewer fingers, etc.) but in the beginning, this is the best way. Until the end of the second year, insist on the use of two hands. Beyond this time it is reasonable to allow the child to lapse into whichever pattern "feels right" for him.

Some children discover earlier than others that greater reading speed is developed by allowing the left hand to move half way across the page and then drift back to hold position at the beginning of the next line. After the right hand finishes a line alone, it quickly returns to "greet" the left which is holding the place to start reading the next line.

SUMMARY

Reading readiness needs to be formal and planned. Do not leave anything to "chance." Categorising, left to right hand movement, manipulative skills, and appropriate vocabulary are essential and should be taught well. Readiness materials and reading experiences must be logically as well as psychologically

planned: they should be sequential as well as of high interest. Whole words and phrases could be emphasised in an effort to develop a basic vocabulary, read with rapid hand movement. Good braille mechanics skills should come before phonetic braille analysis in order to avoid habits which will make the child a slow, inefficient reader. All work should be arranged to encourage independent study. Chose or prepare activities that can be done alone. If the student cannot complete the work, analyse the reasons and correct them. Prepare braille work from a tactual point of view, not a visual point of view. Work used in regular classroom should be edited for use by regular teacher. Some oral work is suitable, but too much makes the child dependent. If he is to work independently, you must teach him the techniques he needs to follow the directions you give.

Some Added Activities to Allow Extra Reading Practice With New Vocabulary

Activity	Example
1. Organise a series of unrelated words to make sentences which use the words given.	1. Make a Sentence to, went, town, John, (John went to town.)
2. Finding the base words.	2. Find the Base Word anybody everybody anything or everything anyone everyone
3. Word ending discrimination. Select from lists those words with same sound at the end.	3. Find the Words that End Alike dancing doing playing see do running
4. Classifying words.	4. Can You Group These Words? carrots dog celery tomato cat mouse horse cow potato **1** **2** carrots dog celery cat tomato mouse potato cow
5. Write a story using new vocabulary.	5. Teacher suggests : "You tell me a story using the words and I will write it for you to read."
6. Read phrases or sentences and reorganise a flash card story.	6. Have sentences on individual cards. Present them in flash manner, but out of order. Let students read and re-arrange.

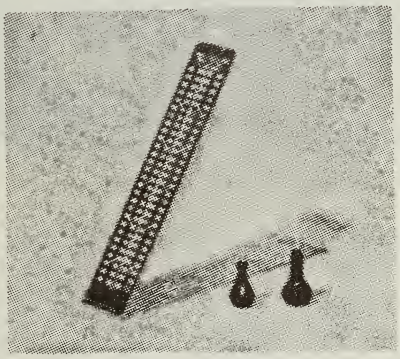
TEACHING BRAILLE WRITING

Braille writing is not required of the student using the special teaching materials and edited textbooks prepared for the beginning of the first year. The practical marking devices as introduced are good substitute "writing" techniques. They precede formal braille writing instruction, and are good supplemental skills even after actual braille writing has begun. Later, however, braille writing will almost exclusively overtake substitute marking systems in popularity and convenience. Further, unless typing is introduced later, braille will be the only writing technique used for completing assignments which other students complete in handwriting.

Formal braille writing instruction cannot begin until the blind child is ready. Before the child can *write* about things he understands, *check* what he writes, and *use* what he has written and corrected, he must have:

1. Control of muscles.
2. Competence in reading a usable number of known (quickly recognised) braille whole word forms.

He must also, of course, have available a braille writing device. There is surprisingly little ever written about braille writing instruments, perhaps because to the uninformed, this equipment appears to be mechanically simple. Braille writing is done manually with a slate and stylus or mechanically with a braille writing machine.

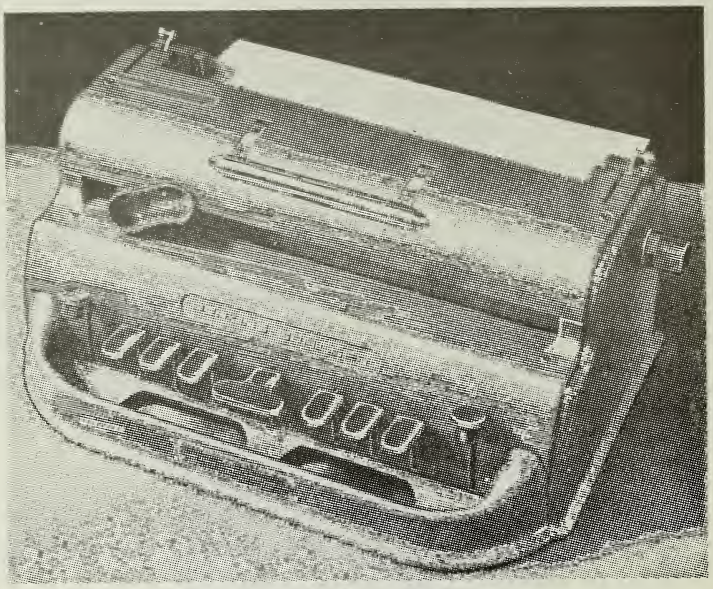


A Slate and Stylus.

Slates and stylus writing requires the child to write backwards.

A slate is a hinged guide for manual reproduction of braille, and is usually made of metal or plastic. The writing paper is inserted between the top and bottom plates. The stylus is a wooden handle holding a metal punch or nib. Held in the palm of the hand with index finger applying the "push," the stylus indents the paper to form one dot of a braille character at a time. Writing is done from right to left and the character is formed in reverse. The indentations made can only be read by turning the paper over. This braille writing device requires advanced muscle control and necessitates much turning the paper back to front for proofreading and recall.

The mechanical braille writer has similarities to the typewriter. It is a machine which holds the paper in position while the mechanical embosser moves, causng several dots or indentations within a braille cell to be made at one time. The most popular machines, furthermore, produce *raised* dots in cells moving from *left* to *right*. No mental reversals are required; the writing is produced linearly in the same direction and with equal ease as in reading. Proofreading and correcting can be done without removing the paper from the machine.



The Perkins Brailler.

A choice in the type of device between mechanical or manual should not be simply a matter of "which can we afford?" Manual and mechanical writing devices each have different values as an aid to independence; each presents different learning problems; each is most suitably taught at a different level in school. They are not alternatives; they supplement each other. Both should be taught and both should be used.

Which Comes First

Since use of a mechanical braille writer seems to demand less muscle control and less mental discipline, it is the proper *first* choice. A braille form matching the child's reading material will be produced if an upward writing instrument, such as the *Perkins* or *Lavender* is used.. (If a downward writing device such as the British *Stainsby* is used, the child loses the advantage of self-correction. This is not a minor matter.) But, just as with the choice between a manual or mechanical device, the further choice between *kinds of each* within a category can only be made by teachers, supervisors and administrators trained in their subject and knowledgeable about all technical aspects of blind education.

If the student has the necessary braille reading proficiency, has adequate muscle development to handle the writing device we have chosen, and is enthusiastic about learning to write, when does formal instruction begin?

With a Mechanical Braille Writer

During the time when he is first learning to read, there has undoubtedly been discussion about how the teacher has prepared materials. The student knows that there is an efficient, rapid means of putting ideas on paper so that braille readers can communicate. The motivation comes from within the child: he wants to learn to write! Often the child tries to encourage the teacher to begin such instruction too soon. His interest in this area may be ahead of his ability or readiness.

Therefore, while writing may be discussed, and the student may be allowed to examine the braille writer from time to time, it would ordinarily be well into the first grade before the average student needs to add this task to his daily responsibilities. This is an average. A very few capable children may be ready *before* the middle of the first standard (grade); many will not be ready until *after* the middle of that school year; and for a few it may be better to postpone mechanical braille writing until nearer the *end* of the first year.

Primary Instructions for Using the Braille Writer

Obviously, the child needs to be taught to place paper in the machine, and should then be expected to care for this simple operation quite independently.

Next, much care must be given to impress the student with careful and correct finger use. All mechanical braille writers have in common a central spacing mechanism usually placed so that the thumb of either hand can reach the space bar equally well. The fore-, middle, and ring fingers of each hand are used on the keys. Accuracy should be stressed in the beginning; speed seems to develop naturally. An easy rhythm and firm strokes of the keys produce even, readable braille with minimum fatigue.

A common error is to move a hand over toward the middle in order to use a forefinger for spacing, instead of a thumb. This will reduce accuracy and speed and should never be allowed. It occurs most often when the machine is at an uncomfortable height. Children *must not* work at tables which are too high; simply lowering the braille writing machine 8 or 10 centimetres will eliminate any discomfort from thrusting either thumb forward as required. Desk height which is normal for a child using pencil and paper is uncomfortable for a child using a braille writing machine.

When to Begin with the Slate and Stylus

As previously explained, slate and stylus writing must be done from right to left and with reversed forms or cell combinations. The paper must be turned over to be read left to right for proofreading. Because this involves more sophisticated muscle control, slate and stylus writing cannot be introduced as early as writing with a machine.

Even if the slate and stylus will be the *only* device available to the child, it should not be introduced until the second year. For a *most capable* child, it may be considered during the late part of the first standard, but this should be an exception. If the slate is a supplement to general use of a mechanical writer, it is better to postpone slate work until the third standard. At this time there is a "levelling off" of new experiences and new skills, and the child is ready for some new special challenge.

It is true that children can learn sooner—but what do they learn, and with what serious adverse affect? They cannot proofread easily since material must be taken from the slate to be checked; they are writing from right to left and reading from left to right simultaneously before either technique has become firmly established. The result may still be some progress in each skill, but it will be slower learning, more difficult teaching, and therefore altogether inefficient planning.

Actual slate choice is merely a matter of local teacher preference as to width, size of cells, number of rows of cells, one side or interlining. Commercially-made British, American, French and Japanese styli are all suitable, and many locally-made products are acceptable. The fancy shapes of "mushroom," "saddle-back" and so forth, seem to be less popular than the more conventional forms. In any event, the critical issue is comfort, and for some small young hands, an undersized stylus is helpful.

The first slate may well be of moderate width (perhaps 24-27 cells) with at least four rows of cells. Very long interlining slates are helpful later on, but interlining to a beginner is of no importance. A board to hold the slate and to use as a control for making even lines is sometimes helpful, but it is not critical. Children have learned without them for many years.

Establishing hand position *is* critical. The forefinger should be squarely placed over the top of the stylus, resting on the area between the knuckle and first joint of the forefinger, with the rest of the finger over the edge and pointed down the stylus shaft. The slate should rest on a firm surface at a slight lower left to upper right angle.

Sequence of Placing Dots

Decide on a procedure for placing dots and use it consistently. Organisation, speed and accuracy are related—each affecting the others—and a planned sequence of indenting is necessary for developing maximum speed and accuracy.

There are several alternative patterns which might be considered. Two which seem most reasonable are :

A. circular (a clock-wise direction)

B. top to bottom, right to left, dots in numerical order

The most popular choice of these is item B. There is only one small reason for this choice as a preference over any other; that is the *rare* need to discuss dot-use in describing patterns orally. The oral "dot calling" should be avoided as much as possible, but if it cannot be avoided, the pattern which allows the stylus to follow a rational numeric sequence seems most logical.

The preferred system is to show the child how to form certain patterns by guiding his fingers with your hand. Tracing imaginary patterns without the slate can be helpful. A whole element should be presented. If the child says, "how do you write such and such, or so and so," you can move to his side and trace the pattern with him, guiding his stylus hand with yours. Sometimes, it is difficult to assist in such a manner and the teacher is obliged to say to the student "It is dot 1, 2, 4 and 6."

The good teacher relies on "dot calling" *very* little; the lazy teacher does it constantly. Dot calling teaches numbers in sequence rather than muscle patterns, so that in order to remember, the child must waste time by saying, "Oh yes, dot 1, 2, 4 and 6," before he starts to write. This slows him down and is an unfortunate habit for teachers to cause.

The Braille Forms to Introduce

Whichever device is used, the material to be introduced must follow a plan. To be effective, this plan must incorporate :

1. A sequence of presenting language elements which will allow for teaching of all required parts, little by little.

2. Experiences which recognise the emotional bases of learning, allow early introduction of whole words and phrases, and quickly lead to success in reading and correcting what one has done.

A Planned Sequence of Presenting Language Elements

Once again, as with all learning, we must consider logical and psychological approaches and hopefully combine them.

We have waited until the child has a reasonable reading vocabulary which includes all the content of the first regular reading text—perhaps some of the second book as well. Therefore, the requirement that the child be capable of reading what he writes is not so limiting, after all. When these words and phrases are combined with the supplementary vocabulary used in teacher-prepared reading material, there is little difficulty for the teacher in quickly combining parts of words into whole words, and whole words into phrases and complete sentences.

To be certain that all elements are eventually included, and still wanting to avoid the rote learning of isolated elements one after another, a teacher's check-list is helpful. Most of the elements will be quickly introduced but a glance at the list from time to time in the beginning will be certain to keep you and the child moving forward toward complete knowledge of all forms, while at the same time, individualising instruction and increasing motivation.

The Emotional Bases of Learning

Having a reason for learning makes motivation an easier task for the teacher, and makes learning more efficient for the student. Perhaps one of the most serious errors internationally in education of the blind is that sometimes time is wasted by teaching skills the students can never use.

In the beginning, the teacher must invent many uses for what the child is learning to write. The sooner the child can produce little stories, poems, name cards, party invitations, announcements, furniture or toy labels, box and file-card tags, etc., the sooner he is convinced of the worth of his effort and our knowledge of how to guide him. Children know the difference between "useful" and "busy work."

Self Correction

Why do we emphasise a minimum vocabulary, and meaningful material for learning as soon as possible?

The only thing that keeps braille writing from being totally rote learning (which we know to be the *least efficient* mode of learning) is the self correcting that is possible when the child can be expected to read and evaluate what he has written. If he cannot read what he writes, he is learning nonsense. If the device chosen does not allow easy immediate "checking," then it is not as suitable as a device which does. If words and ideas provide higher interest than isolated phonetic element drills, then they are to be preferred.

SUMMARY

Everything in learning should be judged, planned, and effected so that the most practical method takes into account *how* a child best learns, *what* he needs to learn, and *which* materials will allow this learning to occur.

Braille writing is only successful when it uses maximum motivation, is accomplished with maximum efficiency, and affords maximum application or use.

About the Equipment

1. A student needs to learn to use both a mechanical braille writer and a slate and stylus.
2. Factors of muscle development and reading skill and interest control the sequence of introduction. Mechanical braille writing is taught earlier; slate and stylus are supplemental.
3. If *only* the slate and stylus can be taught, it is introduced later than the braille writer would be but is given earlier consideration as the essential writing tool than were it supplemental.

IV.

TEACHING HANDWRITING

The Language Arts Curriculum for seeing children places considerable emphasis on handwriting. The ability to form characters or letters or other symbols is important for communication and as a learning tool. For the student taking notes and completing assignments, for the adult commercially and socially, handwriting is a valuable skill.

How Much Handwriting Skill Does a Blind Child Need?

In some Asian countries, handwriting skill equal to that of sighted children is required of blind youngsters in order to qualify for promotion at certain levels. Such standards are not only unrealistic, they are most unwise, for too much time is spent on a skill of only minor use.

In many Western countries blind children are expected at a minimum to learn to sign their names legibly. In places where a written signature is required on legal documents, this is not an impossible standard.

In many Asian countries there may be historically and culturally significant objectives in discussing writing characters with blind students. Since the writing of characters is such an important artistic accomplishment in Oriental cultures, every child should have some knowledge of the aesthetic impact of beautiful calligraphy; every child should be expected to understand something of the intricacy of characters. Also, to understand that the people of Hong Kong, or Singapore, or Taipei all use the same writing but cannot always converse, is to understand more of the complexity of the Orient.

And, there is one area which we can consider as a handwriting activity which is helpful and feasible for all children—totally blind or with useful residual vision.

Handwriting Numerals

The blind child can be taught to write numerals, thereby increasing the opportunities of the teacher for introducing multiple-choice alternatives in daily seat work, sequence arrangements, and various answering techniques. Also, even limited pencil and paper response gives the first year blind pupil a good feeling of confidence and independence and of "doing something like the other children do." This practice with a pencil and paper, incidentally, is helpful in developing the muscle control needed for slate and stylus work.

Some specialised equipment may be helpful, though not necessary, in teaching handwriting. Many teachers welcome such tactual aids as a Sewell Board, a tracing wheel, or stencils.

The Sewell Board is available only from the U.S.A. but it is used extensively in some Asian countries. This raised line drawing device uses a laminated

rubber base on which clear plastic sheets are placed. Using a non-inked or regular ball-point pen, a raised line is produced by friction as the writer draws any described forms or patterns.

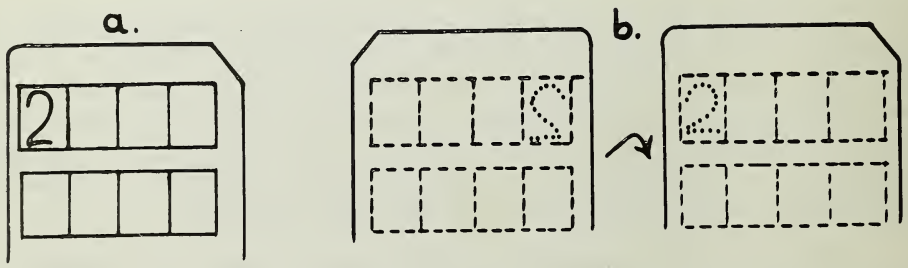
The Tracing Wheel is a simple hand tool made on the principle of the tailor's tracing wheel. Available in many countries or easily manufactured locally, it is a pencil-like handle with a freely revolving notched disc attached to one end. When moved along a paper surface, a series of evenly spaced perforations is made. The wheel must be used over a moderately soft surface so that the downward thrust produces a "readable" raised mark when the paper is turned over.

Stencils are usually made of very firm, thin cardboard or some other durable material. The forms to be learned are cut out so that when the stencil is placed on a paper the pencil can be inserted. With instruction in direction of movement, reference points, etc. the student can literally trace a form. Stencils are more useful with symbols that are less complicated. While they are in some use in Asia, the complicated forms of many Oriental languages exceed the usefulness or helpfulness of such a device.

Presenting the Numerals

In learning the numerals—and you will want to teach all of them from "0" through "9"—the child requires a tactual pattern to follow. The teacher can prepare one with a Sewell Board, or quickly trace a pattern backwards with a tracing wheel, then turn the page over for a raised image. If a Sewell Board is used, cut off the example and attach it to the practice paper with tape.

In the beginning, have your practice sheets ruled off into squares with a braille writer or with a tracing wheel. The child needs tactual boundaries for sides, top, and *especially* bottom. *The "reference line" is necessary for any writing at almost any time.*



a. With Sewell Board image is prepared directly.

b. With Tracing Wheel, image is drawn in reverse. When turned over, a usable embossed form appears.

Numeral writing patterns begin with a feeling of flow and movement. The child could well use a space which allows him two inches to form the top to bottom strokes. Remember that in the beginning he is merely trying to form a "muscle memory," and a broad stroke is more easily remembered than a cramped one. Once established, this muscle memory will allow him to reproduce numerals in gradients down to half-inch (or even below) size. In teaching numerals, and encouraging muscle control, keep in mind the fact that the most common uses for the numbers occur in *double spaced* material. The ability to write recognisable numerals enables the blind child's regular teacher to correct classwork assignments. *Regular teacher* correction of papers is a great advantage which contributes to the blind child's positive feeling about himself and his acceptance—by himself, his teacher, and his peers—as a regular and ordinary member of his seeing class.

The child has already had much previous exposure to the basic circle shape. A number-writing system based on this background instruction has been developed; it can be used by almost every first year primary student with some success. Remember that little children need *simple* instruction and *consistent* instructional language.

Instruct the child :

Place the paper so that the edges are even with your shoulders: Put your left hand with your first finger on the top line and your thumb on the bottom line of your writing space. The bottom line is your reference point.

To write number 1 :

Draw a line from the top line down to the bottom line; point it at your stomach.

To write number 2 :

Make a half circle around to the right, from the top line to the bottom line. Make the half circle set on an extra line.

Repeat: half circle, setting on a line.

To write number 3 :

Make a little half circle to the right, setting on another little half circle to right.

Repeat: half circle, setting on another half circle.

To write number 4 :

Draw a short line from the top left corner toward your left elbow; then a short straight line to the right. Back to the top, draw a line down toward your stomach.

Repeat: Down a half from the top; over to the right. Back to the top and down to your stomach.

To write number 5 :

From the top right corner, make a straight line toward the left; then a short straight line down toward your stomach; set it on a half circle. Repeat: Over to the left, down to the middle; setting on a half circle.

To write number 6 :

Draw half a large circle to the left, with a little circle in it. (You may want to guide the child's hand kinesthetically a few times on this new enlarged circle pattern, especially since the direction has changed.)

To write number 7 :

From the top left corner, draw a straight line to the right; then down to your stomach. (Or, by now you may be calling it properly, "the base line" or "the reference line.")

To write number 8 :

One whole small circle, setting on another whole small circle.

To write number 9 :

Start a whole small circle from the top right corner (move your hand toward your left). Hang it on a straight line to the base (or, "to your stomach").

To write the nought (0) :

Make a large circle setting on the line.

Other systems have evolved using the knowledge of clockwise and counter-clockwise direction. They have some merit, but, of course, should not be considered until *after* the child has become very familiar with a clock and telling time. Writing can start much sooner with the system recommended above.

The child will only require these simple verbal instructions in the very beginning. As the muscle patterns become familiar, the child will be able to form the numerals from memory—requiring kinesthetic correction only from time to time.

SOME WAYS TO USE THE NUMERALS

For Pencil Answers on Braille Practice Materials

Example

Which person is stronger? Put them in order of strength; use numerals to show your choice.

elder sister	*2*
baby	*3*
father	*1*

Example

A true/false test. Mark a true answer with the number 1.
Mark a false answer with the number 2.

A. *2* The sun shines at night.

B. *1* Summer is hot.

C. *1* Kittens are baby cats.

Example

These sentences will tell a story if you change the order. Mark your changes by showing the number of each sentence in a better order :

1. The baby cried. *2*
2. The baby fell down. *1*
3. Mother kissed baby to make him feel better. *3*

Example

Multiple choice. Write the number of the best choice.

Answers: 1. kittens 2. puppies 3. lambs
A. Baby sheep are called *3*

Answers: 1. circle 2. triangle 3. square 4. rectangle
B. A ball is in the shape of a *1*

Example

The family is standing in order by size. Father is on the left. Use the numbers to say how all are standing from left to right.

1. elder brother
2. baby
3. father
4. mother

3 *4* *1* *2*

These were a few examples of how the number-writing skill can be put to work. If the teacher develops many activities in which this ability can be used, the child will find the necessary practice very rewarding and will grow in self-confidence as he uses a tool common to his seeing classmates.

Numeral writing can be introduced in the first year of school, but wait until *after* the child has competence in the marking techniques explained in the *Reading* chapter.

When Can Other Forms of Handwriting Be Introduced

Since handwriting is of less importance to a blind child than to a sighted child and is of much less importance than the other Language Arts skills, it should not be taught until *after :*

a) Reading skill is well established;

b) Braille writing with all appropriate devices is well established;

c) Number facts and basic number operations are understood and used.

It should not be taught at all, UNLESS the pupil is generally competent in other demands of the school programme. Most often, there is something more important for him to do.

However, if handwriting is to be taught, the criterion may be when the seeing children first change from printed forms to writing with connected letters or symbols. But, Asian countries which use a character system have no such division in the handwriting sequence. For them, the over-all "basic efficiency" criterion should be applied. In those areas where psychological readiness may exist because of the sighted group's activities, only a brief introduction to handwriting need be given at the "normal" time for connected writing. This is the time when slate and stylus writing may better be emphasised as the major "substitute" skill.

Teaching a Child to Write His Name Only

This should be done on a "whole letter" or "part name" basis, emphasising a series of connected strokes, lines, loops, angles, reverse-direction lines, etc. Total kinesthetic patterns can be stressed.

Presenting All the Elements

Rarely, for the unusual child with extraordinary skill, the components may be isolated and refined. At this time, care in instructional language is needed. The various components should be carefully described and named so as to stress the relationship of each part to the whole.

A teacher can group or categorise the elements of a handwriting system according to shapes or strokes, to various size of shapes (by half circle, small half circle); to directions of strokes (half circle to the right, half circle to the left).

By teaching the components, the instructor then has a system for describing the shapes of forms being presented.

Another system used to good advantage is based on the student's knowledge of the clock face. When regular handwriting is introduced, the child will have a good understanding of this. By describing forms according to the hour or minute hand and the centre of the circle, the student can visualise or trace the direction of a given symbol.

Example

Put your pencil on the reference line; visualise or "imagine" the centre of the clock face. Move your pencil to 1 o'clock, return to centre with a left half circle; now move straight down to 7 o'clock; return to centre with a right half circle; add the finishing stroke.

These ideas are merely illustrations to demonstrate the need of the child to depend on a known, easily visualised working area and a consistency of language to describe elements. These are best used as reinforcement or supplementary instruction.

Tracing raised patterns, "air-writing," and following a stencil all seem to work, but of course, one must always answer the questions: "Is this important work? Is it relevant work? Can the student afford the time to master this skill?" In many cases the answer is a firm *"No"*—and in such cases, handwriting should be omitted. It should *never* be a criterion for passing or failing a grade or be an eligibility criterion for any academic pursuit.

Character Writing

Character writing is more than a means of communication; it is a cultural heritage and an art form. Because of this, it is appropriate to give a student some instruction in writing characters—enough so he has a "feel" for the importance of beautiful characters. Therefore, a child might be given time with stencils or outlines embossed on a Sewell Board to learn to depict such familiar characters as "long life" or "success" or to learn to write his name. Beyond this, however, for the child exclusively dependent on braille with little or no residual vision, there seems to be little to be gained.

The Low-Vision Child

For the seriously visually handicapped child who is nevertheless capable of using his remaining vision, some additional provision may be made for pencil handwriting instruction. A medium soft-lead pencil should be used—one which makes a heavy, easily seen dark line but which smears as little as possible. A teacher may find it helpful to use a felt-point ink pen to produce clear distinct patterns.

Increase the size of the character or print form, but remember that too large a print size defeats the purpose. To move closer to a page by half the reading distance increases the image size 100%. This is non-optical magnification. But to increase an image beyond a size which in reading would require more than a single eye fixation imposes a psycho-visual process that makes reading more difficult, rather than easier. As a rule, some size increase is good, too much is bad. The correct amount of increase is an individual matter depending on the child's visual ability, preferred reading distance, and available light.

IN SUMMARY

Handwriting is an area which is often abused. It is either ignored completely, or over attended. A blind child profits from handwriting instruction to the extent that it meets his *minimum needs*. But, any regulation which forces blind children to use valuable time "performing" some comparatively useless activity denies these children the time they need for important supplementary skills such as mobility or use of slate and stylus.

V.

USE OF READER SERVICE

Thus far in this monograph, great emphasis has been placed on developing basic communication skills and encouraging independence in their use. This has been set forth in a manner which demands careful structure in the teaching programme, careful preparation of supplementary materials, and the introduction of self-help skills and independent working habits at proper times.

In most countries, the beginning curriculum—perhaps the first three years—are devoted to teaching necessary language arts skills, both for general efficiency in life and to make possible a more rapid, diverse exposure to whatever facts, information, and advanced concepts and skills local educators have selected for inclusion in the approved curriculum.

Therefore, a gradual shift in the late third or early fourth year is noted. The emphasis in curriculum changes from teaching the child how to read to *using* the reading for acquiring specific information. Western educators describe this difference as "acquiring language arts skills" as opposed to "reading in the content fields." A sharp division may not be evident, but within any over-all educational scheme, a gradual change in the purpose of reading may be noted. Of course, in many systems, acquiring language arts competency takes longer; in some, it continues throughout all formal education. Therefore, we are concerned with a general shift in emphasis, rather than a clearly defined separation of purposes.

There can be differences in method as a result of these gradual differences in objective. For example: during the first year of school, a child is taught the symbols used to form words in his mother tongue. These may be various characters, or they may be letters of the Roman or other alphabets. But some children will always be dependent on braille reading and writing. Whatever the methods of teaching or practice, all would agree that the principle of frequent repetition must be applied.

A child would not be expected to "learn to read" if someone were to do his reading for him. No short cuts or reduction in the amount of reading material should be accepted at this time. For the blind child, duplicated embossed materials are the major solution to his need for duplicate experience. Substituted material, as suggested earlier, may be used when necessary, but the less this is done, the more typical will be his learning experience in relation to his seeing peers. Substitution of one activity for another must be done carefully, and only with full understanding of the teaching material, methods employed for the sighted, and knowledge of the underlying concepts which must be acquired by the student. Modified material must also be carefully treated. Omission is a serious responsibility, and should be considered only as a last resort in every case.

Once the braille reader has good reading skills, can manage ordinary teaching materials, and has demonstrated sufficient independence, however, his need to gain specific facts, broad information and new concepts rapidly exceeds his braille reading speed and certain substitute methods may be legitimately considered.

Reader Speed

Listening to a reader should not be a passive substitute for reading practice. Listening involves many skills which must be taught. Choice of the reader is critical. Selection of proper material as well as the times for reading are also important. The blind child must learn how to use reader service efficiently. The "listening" should be an active, structured, educator-supervised procedure in the beginning.

ACCEPTABLE REASONS FOR USE OF READER SERVICE :

Reader Speed

During the first years of school, braille readers may obtain reading speed equal to their sighted classmates. This does not remain the case, however. Eventually, as the amount of reading material increases, the sighted child's reading speed will increase to keep pace with the greater volume of material, while the blind child's braille reading will not. This is an axiom of limitation—not of intelligence, motivation, or skill.

Reading Fatigue

There are great differences among braille readers as to the energy available and the energy used while reading. The developmental reading programme must simply be slowed down if the very young braille reader shows a tendency to fatigue easily. Other contributing factors may need to be considered; but only when the curricular shift cited earlier has occurred can reading fatigue legitimately be used as the reason for offering reader service.

Providing Supplementary Materials

Creative teaching should always involve the use of current materials; the good teacher, remembering that children learn most efficiently when they have their own reason for learning, always takes advantage of spontaneous interest in immediate events within the child's classroom, school, or neighbourhood. When these unplanned but invaluable moments occur, they may require supplementary material which even the best organised teacher has not anticipated. As long as a teacher is following the recommended curriculum and the pupils are achieving at a rate consistent with expectations of local authorities, such "enrichment" teaching should be encouraged. The way to "add" the enrichment "reading" experiences for the blind child is to have available a planned, structured Reader Service.

Making Reader Service an "Active" Experience for the Blind Child

The blind child is not merely a "consumer". He must control the relationship between himself and the reader. He cannot sit docilely by as someone "pours" information or new facts into him. How do we bring this about ?

The Special Teacher has responsibilities to teach punctuality and respect for the time of the reader, and the reason for the reading assignment. He should request scanning of the general content of a book for understanding of the chapter or section content in relation to the body of the work. He teaches the child to listen for special facts, to listen for main ideas, to listen for key introductory or concluding sentences or thoughts.

The blind student must be alert to unusual vocabulary. He must especially have a clear idea of what he is to gain through the listening experience; and, he must develop the confidence to ask for adjustments in reading style or speed or to ask for repetitions, etc.

Who Should Read for the Student

There are no hard and fast rules about selection of a reader. Generally, the situation limits the range of choice. Perhaps an interested parent will volunteer to do certain reading. Most often, the reading is done by a classmate. While there are advantages in having a capable classmate for reading, there are pitfalls too. Often, one child is singled out for such a "voluntary" assignment. The teacher will inevitably choose one of the more capable students—one who is always finished with routine classwork ahead of others in the group. The bright student is available to read earlier than the others most of the time; but reading assistance for a blind classmate may become a burden. If so, this burdensome assignment can interfere in the development of healthy, natural interpersonal relationships within the class.

In some western countries, the reader service is recognised as an integral part of the school responsibility to provide "comparable" educational opportunity for the blind; as such, it is a paid service. Readers are recruited, acquainted with desirable reading techniques by the special teacher, and assigned specific periods of reading for specific children. They are *modestly* compensated. Such a programme is best, not only from the point of view of the child who need not feel embarrassed to expect a high standard of reading, but also from the demonstration to the total school and the community that the school understands how supplementary assistance leads to equal opportunity to learn.

How to Read for the Young Blind Child

Reading should be done at a good rate: speed may vary a little according to the kind of material: quickly for "story" type material; a little less quickly for reading of important facts or ideas. It is safe to say, however, that most

people begin to read too slowly. Ordinary conversation speed is often too slow for the average blind child in a reading situation. The blind child should be asked about his impression of the reader on quality of reading, suitability of voice, and reading speed.

A reader must have an objective point of view. If he is over-sympathetic toward blindness, his voice and manner will reveal his attitude. Such experiences for the blind child do more harm than good. Naturally, diction and skill with the language are essential, but laboured, over-careful speech is difficult to understand. A natural speech rhythm and inflection are most suitable.

The Problem with Reader Service

There can be too much reader service. This abuse will happen most often if readers are used because frequently-used texts are not provided in braille. Reading a book aloud is not a good substitute for having the braille copy if sighted classmates have their ink-print copies available. Reading of whole supplementary texts should be avoided.

And the Worth of Reader Service

If reading is restricted to those instances when reading fatigue is present, reading speed is causing the student to fall behind in content, or spontaneous reading of unplanned materials is required, it will prove a proper and realistic addition to the student's educational programme.

VI.

THE FUTURE

It is both exciting and challenging to consider the changes which are occurring so rapidly in the field of communication. Not one day goes by without a new device being put on the general market which has some potential for helping us to serve blind children. These devices are usually at a very high cost, but as they are accepted by more and more of the general population, the price goes down. We can someday look forward to electric typewriters, electric braille writers, and tape-recorded books available at a price within the reach of almost everyone. The improvement in communication devices must be matched by improvement in teaching language skills.

Language and communication are almost interchangeable words. One can easily see that technological changes will affect elementary school curriculum, and as curriculum is adjusted so, also, will methods be. One of the most consistent changes within our region is in respect to the braille codes being used. Almost without exception, countries are modifying existing braille codes by introducing, or adding more, contractions in literary systems, and introducing codes for such areas as mathematics or science. It is obvious that an increase in contractions will oblige the special teacher of the young blind child to carefully think through his teaching methods, in the field of reading particularly.

Another change that is upon us is the increased attention to blind students at secondary school levels and, with it, increased attention to English as a second or third language. When the upper grades are reached, and English proficiency is stressed, the advantages of a romanised typewriter become apparent both to the student and his teacher. As a special teacher looks over the typing instruction books ordinarily used by students in a commercial school, they see that few suitable materials are available which have been carefully constructed for typing instruction for a young person. Secondary level special teachers in Malaysia, Taiwan and in the Philippines—all countries in which English is not the language of instruction, but in which English is emphasised—are considering high-interest, modified adult material for teaching typing to their blind pupils.

There is increased interest in recorded material either of the traditional "talking book" variety or with tape-recording devices. Emphasis is on tape-recordings not from an educational point of view so much as from the point of view of portability and cost. There are several integrated programmes in Asia which are now using tape-recording to some advantage at the secondary level.

For the countries who are able to afford these supplementary communication devices, a word of caution is appropriate. Recorded materials should be carefully chosen on the basis of a child's demonstrated ability to read in braille, and his over-all independence in managing various educational materials, as well as the proper selection of materials to be recorded. It is a mistake to introduce recorded

material in the early elementary grades while the child is still acquiring basic skills. We might say that with rare exception, recorded supplementary instruction in Asia should be restricted to secondary schools only.

Technological progress and increase in professionalism among teachers of the blind in Asia are contributing equally to a "new look" in education for these children. The wise teacher keeps current in his knowledge of new appliances and changes in the braille code. Before quickly demanding much that is new and perhaps untried, the teacher considers carefully the value of each technological advancement and asks himself whether it is necessary.

Professionalism and creativity bring about more progress than wealth of equipment and experimentation. Think always of the need of the blind child to have a programme which is *equal* to that of his peers.

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